

AMENDMENTS TO THE CLAIMS

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1 5. (Currently amended) The method of claim 1 wherein said coded seismic signals
2 signal further comprise timed discrete frequencies.

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1 6. (currently amended) The method of claim 1 further comprising using, for the at
2 least one receiver, a plurality of seismic receivers located along the drill string.

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1 7. (currently amended) The method of claim 1 further comprising;
2 i) detecting the coded seismic signals signal with at least one sensor located
3 at the surface; and
4 ii) storing the coded seismic signal detected by the at least one surface sensor
5 in a surface processor.

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1 8. (currently amended) The method of claim 1 further comprising transferring the
2 computed arrival time stored in the seismic receiver to a surface processor upon
3 removal of the drill string from the wellbore.

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1 9. (currently amended) The method of claim 7 further comprising processing,
2 according to programmed instructions, coded seismic signals detected at the
3 surface and the seismic receiver detected signals to generate a seismic map.

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3 (a) conveying at least one seismic receiver installed in a drill string wherein
4 the receiver is controlled in part by an associated accelerometer that
5 generates signals to control seismic data acquisition;

6 (b) generating a coded seismic signals signal by using a seismic source near a
7 surface location, the coded seismic signal including information about an
8 activation time of the source ;

9 (c) detecting the coded seismic signals signal with at least one sensor in the at
10 least one seismic receiver at at least one location in the wellbore;

11 (d) computing, in the seismic receiver, a checkshot transit time for the
12 detected coded seismic signals signal using the activation time of the
13 source; and

14 (e) transferring said checkshot transit time to the surface.

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1 11. (currently amended) A method for acquiring seismic data while operating a drill
2 string in wellbore, comprising:

3 (a) synchronizing, at the surface, a surface clock in a surface controller with a
4 downhole clock in a seismic receiver;

5 (b) programming, at the surface, a processor in the seismic receiver to activate
6 during at least one predetermined time window after a predetermined
7 delay time,

- 8 (c) conveying the seismic receiver in the drill string to a location of interest in
9 the wellbore;
- 10 (d) generating, under control of a surface processor, a coded seismic signals
11 signal by using a seismic source near a surface location, the coded seismic
12 signal comprising an arbitrary pattern;
- 13 (e) detecting the generated coded seismic source signals with a near-source
14 sensor and storing said signals in the surface processor;
- 15 (f) detecting the coded seismic signals with at least one sensor in the seismic
16 receiver at a location of interest in the wellbore;
- 17 (g) storing the detected coded seismic signals in the seismic receiver;
- 18 (h) transferring the detected coded seismic signals from the seismic receiver
19 to the surface processor; and
- 20 (i) processing the signals detected by the near-source sensor and the seismic
21 receiver according to programmed instructions to generate a seismic map.

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